



Be Right™

SAFETY DATA SHEET

Issue Date 21-Jun-2016

Revision Date 13-Mar-2017

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1. IDENTIFICATION

Product identifier

Product Name TPTZ Iron Reagent

Other means of identification

Product Code(s) 2608799

Safety data sheet number M00116

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use. Iron determination.

Uses advised against None.

Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company
P.O.Box 389 Loveland, CO 80539 USA
(970) 669-3050

Emergency telephone number

(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Aquatic Acute Toxicity	Category 3

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word - Danger

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Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H402 - Harmful to aquatic life
EUH031 - Contact with acids liberates toxic gas

Precautionary statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P284 - Wear respiratory protection
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Other Information

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Percent ranges are used where confidential product information is applicable.

Chemical Name	CAS No	Percent Range	HMRIC #
Sodium metabisulfite	7681-57-4	20 - 30%	-
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt	18996-35-5	10 - 20%	-
Sodium dithionite	7775-14-6	10 - 20%	-
2,4,6-Tri-(2-Pyridyl)-1,3,5-Triazine 1:3 Salt with p-Toluenesulfonic acid	103404-99-5	0.1 - 1%	-

4. FIRST AID MEASURES

Description of first aid measures

General advice	See section 8 for PPE that may be required during handling. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If no local exhaust use approved fume hood and/or respirator. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. Remove from exposure, lie down. Immediate medical attention is required. IF IN EYES: Flush eyes for at least 15 minutes. May cause skin irritation.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
Skin contact	For minor skin contact, avoid spreading material on unaffected skin. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Remove and isolate contaminated clothing and shoes. Call a POISON CENTER or doctor if you feel unwell. If skin irritation persists, call a physician.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. May cause allergic respiratory reaction. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
Ingestion	Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. Remove from exposure, lie down. Call a POISON CENTER or doctor/physician if you feel unwell. Do not induce vomiting without medical advice.
Self-protection of the first aider	First aider: Pay attention to self-protection. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11: TOXICOLOGICAL INFORMATION.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization in susceptible persons.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water. Carbon dioxide.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Flammable properties

Can burn in fire, releasing toxic vapors.

Specific hazards arising from the chemical

May react violently with. Acids. Oxidizers.

Hazardous combustion products

Sulfur oxides. Nitrogen oxides. Sodium monoxide. Carbon monoxide, Carbon dioxide.

Protective equipment and precautions for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

EC Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

WHMIS Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

Emergency Response Guide Number Not applicable

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium metabisulfite 20 - 30%	TWA: 5 mg/m ³	(vacated) TWA: 5 mg/m ³	TWA: 5 mg/m ³

Chemical Name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	New Foundland & Labrador OEL
Sodium metabisulfite 20 - 30%	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³

Chemical Name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Sodium metabisulfite 20 - 30%	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³

Chemical Name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Sodium metabisulfite 20 - 30%	TWA: 5 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³	NDF

Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Legend

See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls

If no local exhaust use approved fume hood and/or respirator
 Showers
 Eyewash stations

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear tight sealing safety goggles and/or face protection shield. Avoid contact with eyes.

Skin and body protection

Wear protective gloves and protective clothing.

Respiratory protection

Do not breathe gas/fumes/vapor/spray. If no local exhaust use approved fume hood and/or respirator. In case of inadequate ventilation wear respiratory protection.

General Hygiene Considerations

Avoid breathing (dust, vapor, mist, gas). Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear suitable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice. Avoid prolonged or repeated contact with skin. Take off all contaminated clothing and wash it before reuse.

Environmental exposure controls

Avoid creating dust. Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

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Physical state Solid
Gas Under Pressure Not classified according to GHS criteria
Appearance crystalline **Color** White to yellow
Odor Sulfur-like **Odor threshold** No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	3.8	1% Solution
Melting point/freezing point	180 °C / 356 °F	
Boiling point / boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Vapor density (air = 1)	Not applicable	
Specific gravity (water = 1 / air = 1)	2.23	
Partition Coefficient (n-octanol/water)	No data available	
Soil Organic Carbon-Water Partition Coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
None reported	No information available	No data available	No information available

Other Information

Metal Corrosivity Not classified as corrosive to metal according to GHS criteria
Steel Corrosion Rate 4.11 mm/yr / 0.16 in/yr
Aluminum Corrosion Rate 0.18 mm/yr / 0.01 in/yr
Volatile Organic Compounds (VOC) Content Not applicable.

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Bulk density	No data available
Explosive properties	Not classified according to GHS criteria.
Explosion data	Can burn in fire, releasing toxic vapors.
Upper explosion limit	No data available
Lower explosion limit	No data available
Flammable properties	Can burn in fire, releasing toxic vapors.
Flammability Limit in Air	
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Flash point	Not applicable
Method	No information available
Oxidizing properties	Not classified according to GHS criteria.
Reactivity properties	Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

10. STABILITY AND REACTIVITY

Reactivity properties

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria

Chemical stability

Stable under recommended storage conditions.

Special dangers of the product

None reported

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Extremes of temperature and direct sunlight. Incompatible materials.

Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products

Sulfur oxides. Nitrogen oxides. Sodium monoxide. Carbon dioxide. Carbon monoxide.

Explosive properties

Not classified according to GHS criteria. Can burn in fire, releasing toxic vapors.

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Upper explosion limit No data available

Lower explosion limit No data available

Autoignition temperature

No data available

Sensitivity to Static Discharge

None reported

Sensitivity to Mechanical Impact

None reported

11. TOXICOLOGICAL INFORMATION

NIOSH (RTECS) Number None reported

Information on Likely Routes of Exposure

Product Information	Corrosive to eyes. Respiratory sensitizer. May cause respiratory irritation. Causes skin irritation. Harmful if swallowed.
Inhalation	May cause sensitization by inhalation. Avoid breathing dust/fume/gas/mist/vapors/spray. Inhalation of dust in high concentration may cause irritation of respiratory system. May cause irritation of respiratory tract.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin contact	Causes skin irritation.
Ingestion	Harmful if swallowed. Ingestion may cause irritation to mucous membranes.
Aggravated Medical Conditions	Skin disorders. Eye disorders. Respiratory disorders.
Toxicologically synergistic products	None known.
Toxicokinetics, metabolism and distribution	See ingredients information below.

Chemical Name	Toxicokinetics, metabolism and distribution
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Can trigger bronchoconstriction in asthma patients. The allergic origin of the reaction was not proven.
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Under physiological condition, it is expected that sodium dithionite will rapidly convert to related sulfite species: sodium sulfite, sodium hydrogen sulfite, and sodium metabisulfite. Toxicity data for these compounds should be considered.

Product Acute Toxicity Data

Oral Exposure Route No data available
 Dermal Exposure Route No data available
 Inhalation (Dust/Mist) Exposure Route No data available
 Inhalation (Vapor) Exposure Route No data available
 Inhalation (Gas) Exposure Route No data available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1,097.00 mg/kg
ATEmix (dermal)	8,389.00 mg/kg
ATEmix (inhalation-dust/mist)	8.43 mg/L

Ingredient Acute Toxicity Data

Oral Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat LD ₅₀	500 mg/kg	None reported	None reported	Vendor SDS
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt (10 - 20%) CAS#: 18996-35-5	Rat LD ₅₀	1700 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Rat LD ₅₀	2500 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
2,4,6-Tri-(2-Pyridyl)-1,3,5-Triazine 1:3 Salt with p-Toluenesulfonic acid (0.1 - 1%) CAS#: 103404-99-5	Rat LD ₅₀	543 mg/kg	None reported	None reported	Vendor SDS
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Mouse LD ₅₀	1500 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)

Dermal Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat LD ₅₀	2000 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Guinea pig LD ₅₀	> 1000 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat LC ₅₀	2.01 mg/L	4 hours	None reported	ERMA (New Zealand's Environmental Risk Management Authority)

Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

Product Skin Corrosion/Irritation Data

No data available.

Key literature references and sources for data Outside testing

Ingredient Skin Corrosion/Irritation Data

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If available, see data below

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Standard Draize Test	Rabbit	0.5 mL	4 hours	Not corrosive or irritating to skin	RTECS (Registry of Toxic Effects of Chemical Substances)
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt (10 - 20%) CAS#: 18996-35-5	Standard Draize Test	Rabbit	500 mg	4 hours	Data Source	ECHA (The European Chemicals Agency)
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Standard Draize Test	Rabbit	800 mg	None reported	Mild skin irritant	IUCLID (The International Uniform Chemical Information Database)

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

If available, see data below

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Standard Draize Test	Rabbit	107 mg	None reported	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt (10 - 20%) CAS#: 18996-35-5	Organization for Economic Co-operation and Development (OECD) - Test 405: Acute Eye Corrosion/Irritation	Rabbit	100 mg	None reported	Data Source	ECHA (The European Chemicals Agency)
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Standard Draize Test	Rabbit	100 mg	None reported	Eye irritant	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Standard Draize Test	Rabbit	97 mg	24 hours	Eye irritant	ECHA (The European Chemicals Agency)

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route If available, see data below.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
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Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Based on human experience	Human	Not confirmed to be a skin sensitizer	OECD (Organization for Economic Co-operation and Development)
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Respiratory Sensitization Exposure Route

If available, see data below.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Based on human experience	Human	Confirmed to be a respiratory sensitizer	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Chronic Toxicity Information

Product Repeat Dose Toxicity Data

Oral Exposure Route No data available.
Dermal Exposure Route No data available.
Inhalation (Dust/Mist) Exposure Route No data available.
Inhalation (Vapor) Exposure Route No data available.
Inhalation (Gas) Exposure Route No data available.

Ingredient Repeat Dose Toxicity Data

Oral Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat TD _{Lo}	75 mg/kg	15 days	Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (phosphatases and dehydrogenases) Kidney, Ureter, or Bladder Other changes in urine composition	RTECS (Registry of Toxic Effects of Chemical Substances)
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Rat NOAEL	217 mg/kg	None reported	None reported	OECD (Organization for Economic Co-operation and Development)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat TD _{Lo}	1050 mg/kg	6 weeks	Brain and Coverings Recordings from specific areas of CNS Eye Other effects Pigmentary deposition Retinal changes Retinitis	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route No data available
Inhalation (Dust/Mist) Exposure Route No data available
Inhalation (Vapor) Exposure Route No data available
Inhalation (Gas) Exposure Route No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Sodium metabisulfite	7681-57-4	-	Group 3	-	-
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt	18996-35-5	-	-	-	-
Sodium dithionite	7775-14-6	-	-	-	-
2,4,6-Tri-(2-Pyridyl)-1,3,5-Triazine 1:3 Salt with p-Toluenesulfonic acid	103404-99-5	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Group 3 - Not classifiable as a human carcinogen
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	Does not apply

Product Carcinogenicity Data No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Carcinogenicity Data

Oral Exposure Route If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Rat NOAEL	942 mg/kg	2 years	Negative results for carcinogenicity	OECD (Organization for Economic Co-operation and Development)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Product Germ Cell Mutagenicity *invitro* Data

No data available.

Ingredient Germ Cell Mutagenicity *invitro* Data If available, see data below

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Cytogenetic analysis	Hamster ovary	0.18 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Mutation in microorganisms	<i>Salmonella typhimurium</i>	None reported	None reported	Negative test result for mutagenicity	IUCLID (The International Uniform Chemical Information Database)
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Mutation in microorganisms	<i>Salmonella typhimurium</i>	100 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Mutation in microorganisms	Bacteria - not specified	None reported	None reported	Negative test result for mutagenicity	IUCLID (The International Uniform Chemical Information Database)
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Sister chromatid exchange	Hamster ovary	0.2 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Germ Cell Mutagenicity *in vivo* Data

Oral Exposure Route If available, see data below

Chemical Name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Cytogenetic analysis	Rat	1200 mg/kg	None reported	Negative test result for mutagenicity	IUCLID (The International Uniform Chemical Information Database)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

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Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Reproductive Toxicity Data

Oral Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat TD _{Lo}	20000 mg/kg	None reported	Effects on Newborn Stillbirth	RTECS (Registry of Toxic Effects of Chemical Substances)
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	Rat TD _{Lo}	40000 mg/kg	None reported	Effects on Newborn Weaning or lactation index (e.g. # alive at weaning per # alive at day 4)	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity Harmful to aquatic life.

Product Ecological Data

Aquatic toxicity

Fish No data available

Crustacea No data available

Algae No data available

Terrestrial toxicity

Soil No data available

Vertebrates No data available

Invertebrates No data available

Ingredient Ecological Data

Aquatic toxicity

Fish

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	96 hours	<i>Salmo gairdneri</i>	LC ₅₀	15 mg/L	OECD (Organization for Economic Co-operation and Development)
Sodium dithionite	96 hours	<i>Leuciscus idus</i>	LC ₅₀	>= 46 mg/L	IUCLID (The International

(10 - 20%) CAS#: 7775-14-6					Uniform Chemical Information Database)
Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	96 hours	<i>Lepomis macrochirus</i>	LC ₅₀	32 mg/L	OECD (Organization for Economic Co-operation and Development)

Crustacea

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	48 Hours	<i>Daphnia magna</i>	EC ₅₀	98 mg/L	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	24 hours	<i>Daphnia magna</i>	EC ₅₀	89 mg/L	OECD (Organization for Economic Co-operation and Development)

Algae

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	96 hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	40 mg/L	OECD (Organization for Economic Co-operation and Development)

Terrestrial toxicity

Soil

No data available

Vertebrates

No data available

Invertebrates

No data available

Other Information

Persistence and degradability

None known.

Product Biodegradability Data

No data available.

Ingredient Biodegradability Data

No data available

Bioaccumulation

Has the potential to bioaccumulate according to GHS criteria.

Product Bioaccumulation Data

No data available.

Ingredient Bioaccumulation Data

No data available

Additional information

Product Information

No data available

Partition Coefficient (n-octanol/water)

No data available

Ingredient Information

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	log K _{ow} = -3.7	No information available
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt (10 - 20%) CAS#: 18996-35-5	log K _{ow} = -5.78	Estimation through KOWWIN v1.68 part of the Estimation Programs Interface (EPI) Suite™
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	log K _{ow} < .?	No information available

Mobility

Mobility in soil: Moderate to high mobility. If available, see ingredient data below.

Product Information

No data available

Soil Organic Carbon-Water Partition Coefficient

No data available

Ingredient Information

Chemical Name	Soil Organic Carbon-Water Partition Coefficient	Method
Sodium metabisulfite (20 - 30%) CAS#: 7681-57-4	log K _{oc} = -1.88	Estimation through KOCWIN v2.00 part of the Estimation Programs Interface (EPI) Suite™
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	log K _{oc} < .?	No information available

Additional information

Water solubility

Product Information

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Ingredient Information

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Sodium metabisulfite CAS#: 7681-57-4	Completely soluble	600000 mg/L	20 °C	68 °F
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, monosodium salt CAS#: 18996-35-5	Completely soluble	570000 mg/L	25 °C	77 °F
Sodium dithionite CAS#: 7775-14-6	Completely soluble	250000 mg/L	20 °C	68 °F
2,4,6-Tri-(2-Pyridyl)-1,3,5-Triazine 1:3 Salt with p-Toluenesulfonic acid CAS#: 103404-99-5	Soluble	> 1000 mg/L	25 °C	77 °F

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Contaminated packaging

Working in a well-ventilated area. Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state, or federal regulations. Dispose of empty container as normal trash. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P.A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste in countries other than the US. Improper disposal or reuse of this container may be dangerous and illegal. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Special instructions for disposal

If permitted by regulation. Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Dispose of material in an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

U.S. DOT

Not regulated

TDG

Not regulated

IATA

Not regulated

IMDG

Not regulated

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods.

If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA

Complies

DSL/NDSL

Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS

Does not comply

ENCS

Does not comply

IECSC

Does not comply

KECL

Complies

PICCS

Does not comply

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TCSI Does not comply
AICS Does not comply
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

Chemical Name	U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues
Sodium dithionite (10 - 20%) CAS#: 7775-14-6	Sabotage/Contamination

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium metabisulfite 7681-57-4	X	X	X

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Sodium dithionite 7775-14-6	X	X	X
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U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Chemical Name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thresholds
Sodium metabisulfite 7681-57-4	Declarable Substance (LR) Prohibited Substance (LR)	0.0 %

NFPA and HMIS Classifications

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and Chemical Properties -
HMIS	Health hazards - 3	Flammability - 0	Physical Hazards - 0	Personal protection - X - See section 8 for more information

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH *Immediately Dangerous to Life or Health*
 ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)
 NDF *no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

Prepared By Hach Product Compliance Department

Issue Date 21-Jun-2016

Revision Date 13-Mar-2017

Revision Note None

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Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet